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**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF CALIFORNIA**

Order Instituting Rulemaking to Develop an Electricity Integrated Resource Planning Framework and to Coordinate and Refine Long-Term Procurement Planning Requirements.

R.16-02-007
(Filed February 11, 2016)

(NOT CONSOLIDATED)

Order Instituting Rulemaking to Continue Implementation and Administration, and Consider Further Development of, California Renewables Portfolio Standard Program.

Rulemaking 15-02-020
(Filed February 26, 2015)

OPENING COMMENTS OF SOUTHERN CALIFORNIA EDISON COMPANY (338-E)
ON JOINT ADMINISTRATIVE LAW JUDGES' RULING SEEKING INPUT ON
REPORT AND NEXT STEPS FOR DEVELOPMENT OF RENEWABLES
INTEGRATION COST ADDER

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Dated: **June 3, 2016**

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I.

INTRODUCTION

Pursuant to the Joint Administrative Law Judges' ("ALJ") Ruling Seeking Input on Report and Next Steps for Development of Renewables Integration Cost Adder ("RICA") ("Joint ALJ Ruling"), Southern California Edison Company ("SCE") submits these opening comments. SCE supports the development of a methodology that would allow the Commission to calculate all components of a RICA, including the variable integration cost, curtailment, and fixed costs, for geothermal and biomass, in addition to wind and solar resources. SCE recommends that the

California Public Utilities Commission (“Commission” or “CPUC”) form a working group to propose a new or revised methodology for the development of a RICA.

II.

RESPONSES TO QUESTIONS ON SPECIFIC ANALYSIS IN SCE’S APRIL 4, 2016 REPORT

On April 4, 2016, SCE filed a RICA Report responsive to ALJ rulings in Rulemaking (“R.”) 13-12-010 dated December 9, 2015, and March 9, 2016 (“April 4th RICA Report”). The April 4th RICA Report:

1. Explained the analysis conducted to be responsive to all requirements of ALJ David Gamson’s ruling, issued on March 27, 2015 (“March 27 ALJ Ruling”);
2. Explained the results of the analysis (or lack thereof, and why); and
3. Provided SCE’s recommendations for next steps as a result of the analysis.

The Joint ALJ Ruling poses eight questions for parties related to the April 4th RICA Report. SCE appreciates the Joint ALJs’ consideration of its April 4th RICA Report and looks forward to hearing other parties’ responses. While the April 4th RICA Report provides SCE’s specific response to each of the eight questions, SCE will emphasize and expand on elements of the April 4th RICA Report that are responsive to Question 6.

A. Question 6: What should the Commission conclude about the calculation of variable integration cost adders for wind and solar, based on the results described within SCE’s April 4, 2016 report?

As outlined in the April 4th RICA Report, SCE recommends that the Commission consider a new or improved methodology for the development of a RICA that incorporates feedback from other parties.¹ To this end, SCE recommends that the Commission form a

¹ See April 4th RICA Report, p. 23.

working group to collaborate on and develop a proposed methodology. A collaborative process would allow parties to more quickly generate, respond to, and accept or reject proposals.

SCE supports proposals that are inclusive of geothermal and biomass, in addition to wind and solar, and would enable the Commission to calculate fixed and all other components of a RICA, rather than just the variable integration cost.² As described in the April 4th RICA Report, “Expanding the study’s scope will ensure that the study’s basis, assumptions, and ultimately, results, apply to and are evaluated in light of all relevant scenarios included in the study (i.e. RPS penetration, RPS portfolio mix).”³ As explained in the April 4th RICA Report, a literature review on variable integration costs compiled by the National Renewable Energy Laboratory (“NREL”) suggests that variable integration costs are difficult in practice to calculate or measure.⁴ Fixed or other costs components may prove easier to calculate and improve the robustness of the overall result.

III.

RESPONSES TO QUESTIONS RELATED TO POLICY CONSIDERATIONS AND NEXT STEPS

The Joint ALJ Ruling poses five questions for parties related to policy considerations and next steps in the development of a RICA. SCE’s comments address each of these questions.

² See Id., p. 24.

³ See Id.

⁴ See Id.

A. Question 9: What future activities would you recommend the Commission undertake to further refine calculation of renewables integration costs according to the legislative requirements, considering that the result should also have a productive impact on both renewables and broader resource planning and procurement? How high a priority should it be for the Commission to undertake such activities, if any? Explain.

As SCE discussed in its April 4th RICA Report (pp. 23-24):

“Although SCE, EE, E3, and ED have made significant strides over the past year to improve the PLEXOS Model’s performance and adjust certain modeling assumptions in the 2014 LTPP Database for the purpose of the RICA Methodology, serious flaws remain. It is unclear at this point whether further attempts at trouble-shooting would fix these flaws. Therefore, SCE recommends concluding this study in the 2014 LTPP (R. 13-12-010) and resuming this effort in the 2016 LTPP-IRP Proceeding (R.16-02-007) with a new or improved methodology that incorporates feedback from other parties.

This RICA Study offers important lessons to consider in developing a new or improved methodology. First, the methodology, database, and model should function well together and include accurate inputs. As described herein, the LTPP Database, which is designed to capture large-scale generation costs, included proxies for certain pricing that resulted in modeling errors when coupled with the PLEXOS Model in this Study. Consideration of the interaction between the chosen database, model, and methodology will be important in future studies.

Second, the methodology should include an appropriate magnitude of differences for the chosen model. For example, if the model is generally used to measure large differences between cases, then the methodology should also measure large changes. This could be done through comparing only two cases rather than four cases or increasing the amount of incremental renewables.

Third, a better understanding of reserve requirements and their relationship with increasing renewable penetrations is needed. It is possible that the reserve requirements in this study were not large enough to capture the true impact on the grid of renewable integration in the different cases. In addition, other studies have

incorporated combinations of regulation reserves, load following reserves, contingency reserves, energy imbalance, unit commitment impacts, and opportunity costs in their variable renewable integration cost calculations.²⁵ A more in-depth study of variable renewable integration grid impacts may be useful in further studies.

SCE also suggests that the Commission expand the study beyond just the variable RICA to include fixed and all other cost components that likely comprise a significant portion of the total cost of integrating renewables. Fixed and other costs may prove easier to calculate than variable costs. For example, a literature review on variable integration costs compiled by the National Renewable Energy Laboratory (NREL) found that “although it is easy in concept to define integration costs, it is very difficult in practice to calculate or measure integration costs in a meaningful way.”

Finally, the Commission should consider expanding the study’s scope from variable renewable resources to include geothermal and biomass resources. These resources may also have integration costs when calculating the RICA holistically with both fixed and variable costs. Expanding the study’s scope will ensure that the study’s basis, assumptions, and ultimately, results, apply to and are evaluated in light of all relevant scenarios included in the study (i.e. RPS penetration, RPS portfolio mix).”

B. Question 10: Should the adopted interim values for the variable component of the renewables integration cost adder be retained for use in the RPS Calculator and least-cost best-fit evaluation in RPS procurement? If not, what should replace them?

Yes. The Commission should retain the adopted interim values for the variable component of the RICA for use in the RPS Calculator and least-cost best-fit evaluation in RPS procurement.

- C. **Question 11: Should renewables integration cost adders be developed for geothermal and biomass resources to reflect costs to the system for the relative inflexibility of these resources? If yes, how should these adders be calculated? How should such a methodology recognize that any resources that are not infinitely flexible will likely have some “integration” costs?**

Yes. See response to question 9.

- D. **Question 12: Should the Commission modify its previous work to develop a renewable integration cost adder specifically targeted to inform RPS planning and procurement, and instead, inform RPS planning and procurement via a comprehensive integrated resources planning process (for example, an analysis that optimizes for reliability, low carbon emissions, and least cost across all resource types)? Why or why not?**

- a. **How would such an analysis be conducted?**

The Commission should perform this type of work as part of the Integrated Resource Planning in R.16-02-007.

- b. **How would any resulting optimized portfolio(s) inform procurement of individual resources?**

The Commission should not utilize optimized portfolio(s) to inform procurement of individual resources, but should utilize the competitive market to inform procurement of individual resources. Information about the RICA can be an element of the evaluation of bids as it is today.

- c. **If the idea of a separate renewables integration cost adder with California-specific fixed and variable components, is no longer pursued, how would the Commission fulfill its legislative requirement to calculate renewables integration costs?**

The Commission can meet its legislative requirement through use of the interim variable RICA. However, it can also meet its legislative requirement through recommended work as part of the Integrated Resource Planning in R.16-02-007.

- E. **Question 13: How should parties most effectively participate in any future development of integration cost analysis pursued by the Commission (e.g. small working groups, a series of workshops, collaborative effort by parties with modeling capabilities, etc.)?**

Workshops hosted by Energy Division (to start) would be the most effective way to start future development of integration cost analysis.

IV.

CONCLUSION

SCE respectfully requests that the Commission pursue SCE's proposed next steps for development of a RICA methodology.

Respectfully submitted,

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/s/ Carol A. Schmid-Frazee

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June 3, 2016

VERIFICATION

I am a Director of Energy Policy in the Regulatory Affairs Organization of Southern California Edison Company and am authorized to make this verification on its behalf. I have read the foregoing **OPENING COMMENTS OF SOUTHERN CALIFORNIA EDISON COMPANY (338-E) ON JOINT ADMINISTRATIVE LAW JUDGES' RULING SEEKING INPUT ON REPORT AND NEXT STEPS FOR DEVELOPMENT OF RENEWABLES INTEGRATION COST ADDER**. I am informed and believe that the matters stated in the foregoing pleading are true.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this **3rd day of June, 2016**, at Rosemead, California.

/s/ Gary Stern

By: Gary Stern

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